SingIFuse™ SF-1206HHxxM Series Features

- Single blow fuse for overcurrent protection
- 3216 (EIA 1206) footprint
- High current rating applications
- High inrush withstand capability
- UL 248-14 listed
- RoHS compliant* and halogen free**
- Multilayer SMD design
- Surface mount packaging for automated assembly

SF-1206HHxxM Series - High Current & High Inrush Multilayer Surface Mount Fuses

Electrical Characteristics

Model	Rated Current (Amps)	Fusing Time	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I^2t (A^2s) ****
SF-1206HH10M-2	10.0	Open within 5 sec. at 350 % rated current	0.0045	DC 24 V	DC 24 V 150 A	12.0
SF-1206HH12M-2	12.0		0.0039			19.0
SF-1206HH15M-2	15.0		0.0031		DC 24 V 200 A	34.0
SF-1206HH20M-2	20.0		0.0020			64.0
SF-1206HH25M-2	25.0		0.0016		DC 24 V 250 A	187.0
SF-1206HH30M-2	30.0		0.0012		DC 24 V 300 A	270.0

*** Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ±25 %.
**** Melting I^2t calculated at 1000 % of current rating.

Reliability Testing

No.	Test	Requirement	Test Condition	Test Reference
1	Solderability	Minimum 95 % coverage	One dip at 245 °C for 5 seconds	MIL-STD-202 Method 208
2	Soldering heat resistance	DCR change ≤ 10 % No mechanical damage	One dip at 260 °C for 60 seconds	MIL-STD-202 Method 210
3	Moisture resistance	DCR change ≤ ±15 % No excessive corrosion	10 cycles	MIL-STD-202 Method 106
4	Salt spray	DCR change ≤ ±10 % No excessive corrosion	48 hour exposure, 5 % salt solution	MIL-STD-202 Method 101
5	Mechanical vibration	DCR change ≤ ±10 % No mechanical damage	0.4 inch D.A. or 30 G between 5-3000 Hz	MIL-STD-202 Method 204
6	Mechanical shock	DCR change ≤ ±10 % No mechanical damage	1500 G, 0.5 ms, half-sine shocks	MIL-STD-202 Method 213
7	Thermal Shock	DCR change ≤ ±10 % No mechanical damage	100 cycles between -65 °C and +125 °C	MIL-STD-202 Method 107
8	Life	No electrical “opens” during testing Voltage drop change shall be less than ±20 % of initial value	80 % rated current (75 % for < 1 A fuses) for 2000 hours at ambient temperature between +20 °C and +30 °C	Refer to STP document

Agency Recognition

UL File Number E198545

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WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

SingIFuse™ SF-1206HHxxM Series Applications

- Portable memory
- LCD monitors
- Disk drives
- PDAs
- Digital cameras
- MP3 players
- Cell phones
- Rechargeable battery packs
- Battery chargers
- Set-top boxes
- Industrial controllers
- Battery Management Systems (BMS)
- LED lighting
- Power tools

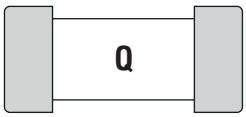
Environmental Characteristics

Operating Temperature ..... -55 °C to +125 °C
Storage Conditions
- Temperature ..... +5 °C to +35 °C
- Humidity ..... 40 % to 75 %
- Shelf Life ..... 2 years from manufacturing date

Moisture Sensitivity Level 1
ESD Classification (HBM) ..... Class 6

Typical Part Marking

Represents total content. Layout may vary.



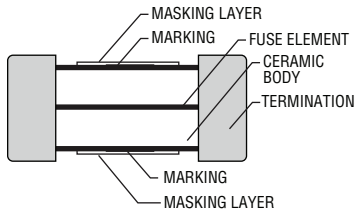
RATED CURRENT (A)
Q = 10.0
X = 12.0
Y = 15.0
Z = 20.0
S = 25.0
V = 30.0

How to Order

SF - 1206 HH 10 M - 2

- SingIFuse™ Product Designator
- SMD Footprint
  1206 = 3216 (EIA 1206) size
- Fuse Blow Type
  HH = High Current & High Inrush
- Rated Current
  10 ~ 30 (10.0 A ~ 30.0 A)
- Structure Type
  M = Multilayer
- Packaging Type
  - 2 = Tape & Reel

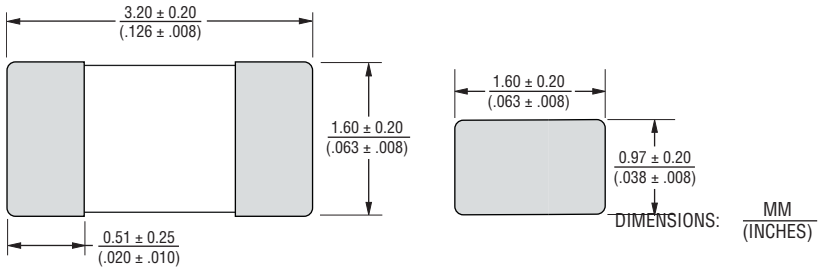
Construction



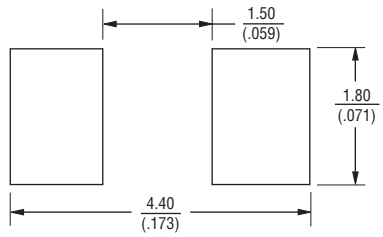
Packaging Quantity

3,000 pieces per 7-inch reel

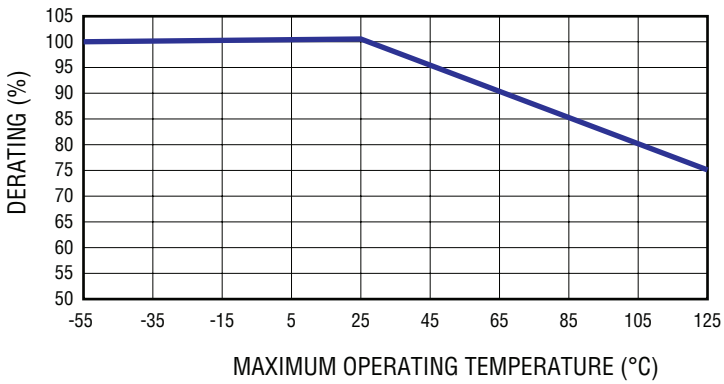
Product Dimensions



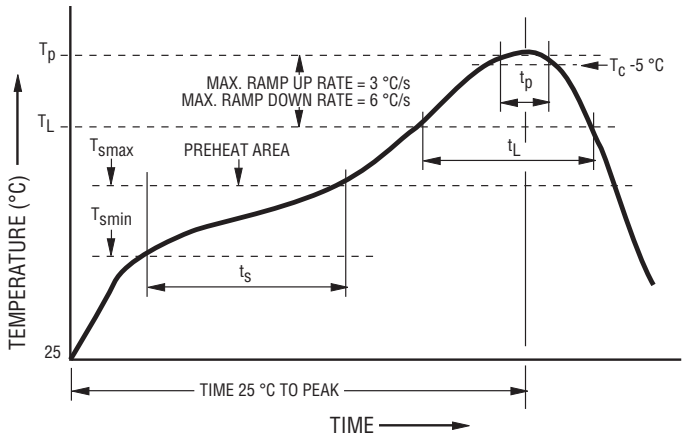
Recommended Pad Layout



Current Rating Thermal Derating Curve



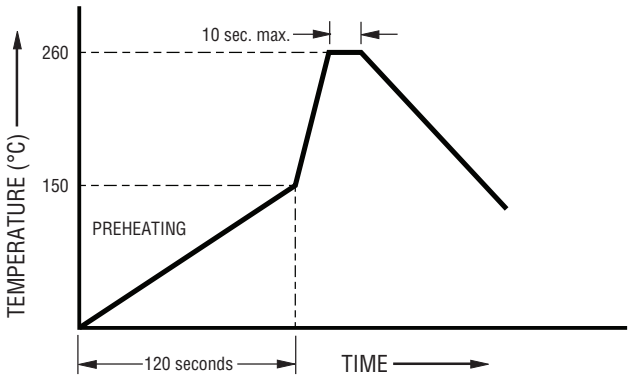
Solder Reflow Recommendations



Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. (T_{smin}) Temperature Max. (T_{smax}) Time (t_s) from (T_{smin} to T_{smax})	 150 °C 200 °C 60~120 seconds
Ramp Up Rate (T_L to T_p)	3 °C / second max.
Liquidous Temperature (T_L) Time (t_L) maintained above T_L	217 °C 60~150 seconds
Peak Package Body Temperature (T_p)	260 °C
Time (t_p)* within 5 °C of the specified classification temperature (T_c)	30 seconds*
Ramp Down Rate (T_p to T_L)	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

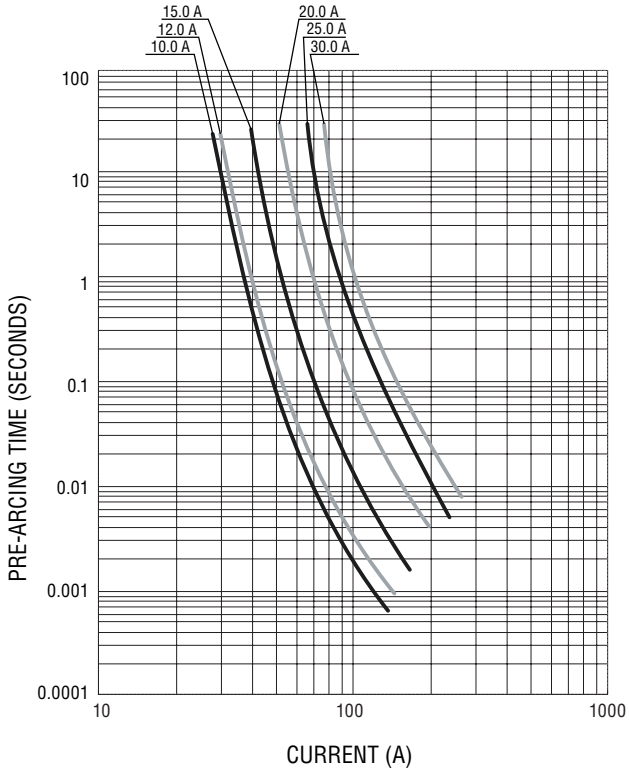
* Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum.

Recommended Temperature Profile for Wave Soldering

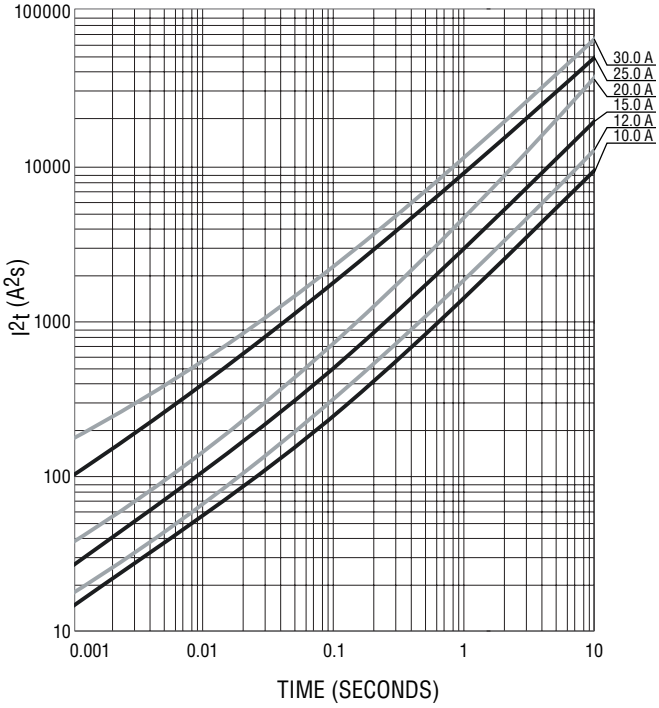


Wave soldering is suitable for 1206 size models.

Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves



SF-1206HHxxM Series Tape and Reel Packaging Specifications

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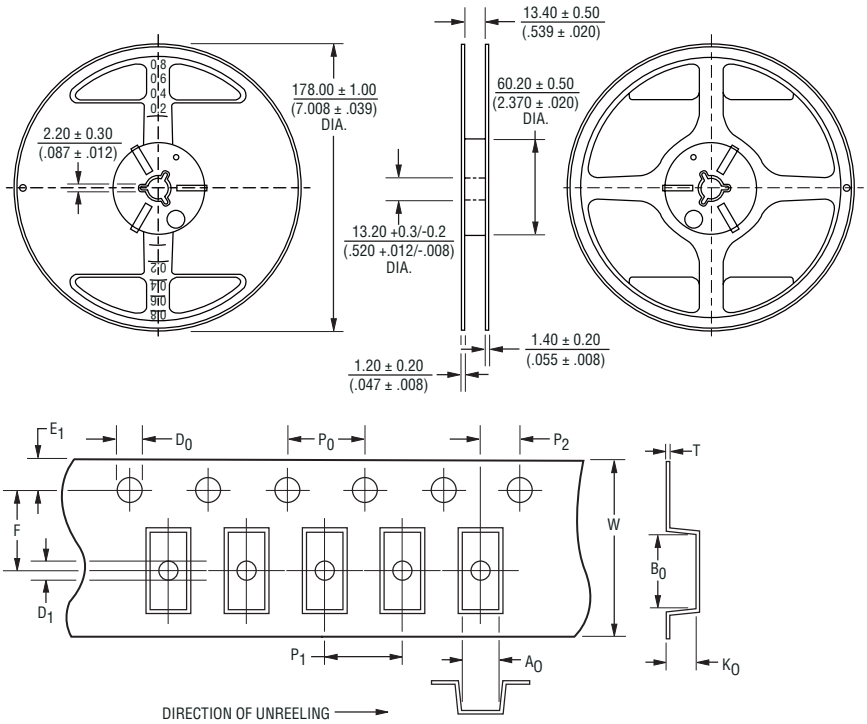
Tape Dimensions	SF-1206HHxxM Series per EIA 481-2
W	8.00 ± 0.10 (.315 ± .004)
P_0	4.0 ± 0.10 (.157 ± .004)
P_1	4.0 ± 0.10 (.157 ± .004)
P_2	2.0 ± 0.05 (.079 ± .002)
A_0	1.80 ± 0.10 (.071 ± .004)
B_0	3.50 ± 0.10 (.138 ± .004)
F	3.50 ± 0.05 (.138 ± .002)
E_1	1.75 ± 0.10 (.069 ± .004)
D_0	1.50 + 0.10 (.059 + .004)
K_0	1.10 + 0.10 (.043 + .004)
T	0.23 ± 0.02 (.009 ± .001)

PACKAGING: Plastic tape, 3,000 pcs. per reel



DIMENSIONS: MM / (INCHES)

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